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Memo

DATE: *March 19, 2004*

TO: RHIC E-Coolers

FROM: *Ady Hershcovitch*

SUBJECT: **Minutes of the March 19, 2004 Meeting**

Present: Ilan Ben-Zvi, Andrew Burrill, Alexei Fedotov, Ady Hershcovitch, Dmitry Kayran, (BINP Novosibirsk, Russia), Thomas Roser, Triveni Srinivasan-Rao, Dejan Trbojevic, Jie Wei.

Topics discussed: TESLA Collaboration, Electron & Collider Workshop, Experiments.

Electron & Collider Workshop: in answer to Thomas' question Ilan provided his impressions of the Electron Ion Collider (EIC) Workshop that took place earlier this week at Jefferson Lab. The two EIC designs that were discussed are BNL's eRHIC and Jefferson's Lab ELIC. The latter involves a 7 GeV electron beam colliding with a 150 GeV proton beam. It is based on the CEBAF accelerator. During the meeting J-Lab people expressed interest in our IBS and electron cooling simulations. On that topic Derbenev suggested that horizontally flat beams are better (reduced IBS). Jie did some calculations that indicated that beyond slight flattening no advantage is seen. Ilan said that horizontally flat beams should increase the cooling speed if the longitudinal velocity spread is small. The vertical velocity spread in a flat beam is small and the horizontal velocity of any ions becomes small part of the betatron period. The cooling in the longitudinal direction can be shared with other dimensions. In the workshop's summary statements, a claim was made that ring - ring does not always need electron cooling while the linac-ring requires it, a statement which is not correct. Finally, Richard Milner made moving summary, making very clear arguments on the scientific importance of the Electron Ion Collider for understanding gluons, which make up most of the non-dark matter.

TESLA Collaboration: Regarding TESLA, Ilan said that the collaboration has Electro-polishing facility as well as the needed high pressure water rinsing that can treat a cavity our size. These are two features that Jefferson Lab does not have. In an answer to Dejan's question on whether FNAL, which is building a cleaning facility with ANL has Electro-polishing capability, Ilan replied that he does not know. But Ilan is confident that they'll eventually have Electro-polishing facility.

Experiments: in an answer to Thomas, Triveni reported that the superconducting cavity, which had a leak that was fixed and is now being cooled. Andrew prepared a few cathodes

for the deposition system, which is now under vacuum. In answer to Ilan's question Alexei talked about options of performing cooling experiments at ESR and COSY, (good but a busy machines) and CELSIUS, on which machine time is ample.